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Jun 5, 2003

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TITLE: Human insulin analogues

PUBLICATION-DATE: June 5, 2003

## INVENTOR-INFORMATION:

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APPL-NO: 09/ 924447 [PALM]  
DATE FILED: August 9, 2001

## RELATED-US-APPL-DATA:

Application 09/924447 is a continuation-in-part-of US application 08/552749, filed November 3, 1995, ABANDONED

INT-CL: [07] A61 K 38/28, C07 K 14/62

US-CL-PUBLISHED: 514/3; 530/303

US-CL-CURRENT: 514/3; 530/303

REPRESENTATIVE-FIGURES: NONE

## ABSTRACT:

Novel human insulin analogues are provided for treating Diabetes Mellitus, the analogues being characterized by having enhanced stability to insulin-degrading enzyme (IDE) as well as achieving longer life times than native insulin. The insulin analogues of the invention are further characterized structurally by elimination of B26-B30 in the human insulin B-chain and by having at least one specified substitution at B10, B14 and B17.

## RELATED APPLICATION

[0001] This application is a continuation-in-part of my (previously allowed) application Ser. No. 08/552,749 filed Nov. 3, 1995.

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Summary of Invention Paragraph (30):

[0026] Following this conclusion, Applicant has introduced the following modifications in the human insulin B-chain: (1) deleting B-26-B30 ; and (2) replacement of segments B10, B14, B17 and/or B25 with other amino acid substituents, which substituents are directed to the improvement of providing insulin analogues having greatly improved resistance to degradation by insulin-degrading enzyme ("IDE"), thereby, in turn, greatly increasing its life both in vitro and in vivo in the treatment of humans.

## CLAIMS:

9. A human insulin analogue as defined in claim 1 wherein said at least one substitution is at B25 wherein a polar amino acid containing amine substitution of carboxylic acid groups or unsubstituted groups adapted to increase resistance of the analogue to insulin-degrading enzyme is substituted for the phenylalanine substituent at B25 of the human insulin molecule.